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## Are You "Cooling Challenged?"

Although the Technology and Maintenance Council's (TMC) taskforce looking into EGR cooler maintenance has not issued a "Recommended Practice," from the literature and Internet searches, it seems heavy-duty diesels are by and large not susceptible to cooler problems. It's the mediumduty trucks and Ford diesel pickups that are most troubled. The power units in question are the Ford full-size pickup with the earlier PowerStroke (by Navistar, not the latest Ford diesel) and the VT-365 V8 in International light-to-medium trucks.

The problem with the Ford is that the cooler pipes mechanically fail where they're attached to the casing allowing coolant and exhaust to mingle. In the case of the Internationals, the coolers overheat because they're inline with the oil cooler. If the oil cooler overheats, the EGR cooler also overheats but with more dramatic results.

Judging from comments at TMC sessions I've attended, EGR coolers are very susceptible to entrapped air in the cooling system when a drain and recharge is performed. One user said his shop had better luck jacking the front axle up 24 inches on a lift to "get the last gallon of air" out of the system. Other suggestions are to fill the cooling system using a vacuum tool to ensure no trapped air can find its way into the EGR cooler to cause local overheating.

At the 2007 engine scorecard session at the TMC Spring Meeting, several panel members expressed concerns about EGR coolers, including how to clean out a cooler if it becomes contaminated. The suggestion is to send it out to a specialist for an ultrasonic cleaning, especially dual-pass coolers that can't be cleaned any other way.

Evans Cooling makes a non-aqueous coolant for cooling systems operating in environments that challenge the ability to cool. As in the problems with air in the EGR cooler, locally produced water vapor in a cooling system can cause disastrous overheating at a hot spot. Most often this is in the cylinder head around the exhaust ports and can often result in warped or cracked heads and blown head gaskets.

The Evans fix is a coolant that doesn't boil at the 235 degrees or so of a pressurized water-based coolant – perilously near the operating temperature of the engine. The Evans coolant has a boiling point 150 degrees above the engine's operating temperature, removing the possibility of local hot-spots. But here's the kicker, it's also been shown to be proof against cavitation erosion of cylinder liners.

It has a lot going for it, except maybe cost. However, if you have equipment that is "cooling challenged," you may want to have a look at www.evanscooling.com.

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